

School staff delivery of a solution focused intervention to support pupils' behaviour

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Abstract

A single case experimental design with multiple baselines was employed to explore the relationship between a solution focused intervention delivered by school staff and the externalising behaviour of four primary school pupils. The intervention took place over four to five sessions, which were delivered by non-specialist school staff with the use of training, supervision, and a manual. Observations of a specific positive behaviour were carried out both before and during the intervention, which were then analysed through visual and statistical analysis. A pre and post intervention questionnaire measure of pupils' externalising behaviour was collected. For each participant, one videoed session was used to explore the fidelity of the intervention to the manual. Analysis of observations of behaviour showed a significant increase in a specific positive behaviour for three of four participants. A measure of pupils' externalising behaviour showed a significant reduction for two of the eight questionnaires collected. Video analysis suggested variation of fidelity across participants. This research provides tentative support for specific outcomes from a solution focused intervention, when delivered by non-psychologists who are provided with appropriate support. It has also been found that non-specialist school staff practitioners were able to deliver the intervention through applying elements from a manual to have a positive impact on a specific behaviour for three of four participants. There is a need for further high quality research to establish the effectiveness of solution focused interventions when delivered by non-specialists with the use of consistent intervention and outcome measures.

KEYWORDS

behaviour, non-specialist, school, solution focused

Key Points

- Non-specialist school staff delivered a manualised solution focused intervention to have a positive impact on a specific behaviour for three of four children involved. There was limited support for a standardised measure of externalising behaviour which improved for two of eight questionnaires collected.
- A manualised solution focused intervention supported non-specialist practitioners to hold solution focused conversations with pupils with some fidelity to the manual, which varied across practitioners.
- A novel fidelity method was developed to explore the quality of solution focused interactions between practitioner and pupil, by comparing the elements and questions from the manual with those used in a videoed session.
- This research highlights the importance of robust training programmes to support the delivery of a manualised solution focused intervention when delivered by non-specialist school staff.

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SOLUTION FOCUSED APPROACHES

Solution focused brief therapy (SFBT) was originally developed for use with adults as a model of family therapy (de Shazer & Berg, 1997). Solution focused approaches (SFAs) incorporate the principles and techniques of SFBT into practice (Stephenson & Johal-Smith, 2001) and have been adapted for use with children and young people in schools (Rhodes & Ajmal, 1995). School-based research includes a review of SFBT, which showed a positive effect for the externalising and internalising behaviour of pupils (Kim & Franklin, 2009).

Applications of SFAs in schools have ranged from individual 'life coaching' (Green et al., 2007) to group 'reteaming' (Kvarme et al., 2010) and whole school SFAs such as the 'Solution Oriented School' (Evans & Cowell, 2013). Of the research demonstrating medium and large effect sizes, SFAs found to positively influence internalising behaviour included brief counselling with solution focused adaptations (Littrell et al., 1995; Thompson & Littrell, 1998); the use of SFBT alongside teacher consultations (Franklin et al., 2008) and life coaching- an SFA in combination with cognitive behavioural therapy (CBT, Green et al., 2007). A positive impact for externalising behaviour has also been shown by Franklin et al. (2008), as well as a whole school approach of the 'Solution Focused Alternative School' (Franklin et al., 2007). A further approach of 'SAM' (solution action mentorship) incorporated action learning and community mentorship into an SFA which showed improvements in pupils' knowledge and attitude towards drugs (Froeschle et al., 2007).

Non-specialist delivery of solution focused approaches

A wide range of professionals deliver SFAs in schools. A systematic review of international research included 22 best evidence studies from the USA and 6 from the UK, which presented no clear level of training is required by practitioners to deliver SFBT (Woods et al., 2011). Nonetheless, the majority of school-based research explores practitioners who could be considered to be 'specialists', due to their high level of skills and experience in forms of therapy. Examples of this include school or educational psychologists (Fernie & Cubeddu, 2016; Rakauskienė & Dumciene, 2013) and counsellors (Froeschle et al., 2007; Gatlin & Bryant, 2016). Solution focused approaches are also a prominent form of practice within social work (Lee, 2013) and have been used by social workers in schools (Franklin et al., 2008; Newsome, 2004, 2005).

A limited number of studies have explored the delivery of SFAs by typical school staff, who are unlikely to be specialists in SFAs. These include SFA delivery by teachers, which has demonstrated improvement in pupils' depression, cognitive hardiness, and hope (Green et al., 2007) and an increase in pupils' reading scores, self-esteem, and locus of control (Galbraith & Alexander, 2005). An SFA has also been delivered by school nurses, which showed an increase in general self efficacy for female pupils and assertive self efficacy for male pupils (Kvarme et al., 2010). Whole school SFAs have been delivered by teaching staff, school support staff and the students themselves, which have demonstrated improvements in school credits earned, but a decrease in attendance (Franklin et al., 2007). Another whole school SFA showed improved goal attainment, self-esteem, and school exclusions for pupils, although also found an increase in unauthorised absences (Evans & Cowell, 2013). Overall, SFA delivery by non-specialist school staff has shown some positive but also some negative outcomes from limited research. The specificity of the outcomes measured makes it difficult to compare the impact of non-specialist to specialist delivery of SFAs.

Rationale

While the use of SFBT and SFAs in schools has shown positive effects for pupils' internalising and externalising behaviour (Kim & Franklin, 2009), there has been limited exploration of the effectiveness of an SFA when delivered by non-specialist school staff (Evans & Cowell, 2013; Franklin et al., 2007; Galbraith & Alexander, 2005; Green et al., 2007; Kvarme et al., 2010). Therefore, there is a need for research to establish whether an SFA could be an effective early intervention in supporting pupils' SEMH when delivered by non-specialist school staff.

Research questions

The following research questions were considered:

1. Can non-specialist school staff effectively deliver sessions of a solution focused intervention in a manual format to impact upon the frequency of pupils' positive behaviour?
2. Do the solution focused intervention sessions affect pupil, parent, and teacher ratings of the pupils' externalising behaviour?

METHOD

Research design

A single case experimental design (SCED) was repeated several times with non-concurrent multiple baselines across participants. A randomised phase start point design was used (Kratzchwill & Levin, 2010), in which the start of the intervention was determined through random assignment of the length of baseline for each participant (Edgington, 1992). The observations for one participant were assigned to a baseline condition of 10 data points; however, due to time commitments, the observer collected five data points.

Intervention

The researcher developed the manualised solution focused intervention to include key principles and strategies that are regularly included in SFBT guidance documentation (Bavelas et al., 2013; George et al., 2017; NSPCC, 2015; Trepper et al., 2010). Elements of SFBT were used within the manual if they were included in over 40% of the medium to high quality studies of a systematic review, and if they had a positive effect for participants (Woods et al., 2011). The manual was piloted with two members of school staff and one child, and the format was edited based on their feedback.

Sessions of the solution focused intervention followed the elements of the manual. The first session included 'problem free talk', an explanation of the intervention, exploration of the pupil's best hopes for the intervention, discussion of their preferred future (determining what they would like to happen using the 'miracle question'), and scaling of the preferred future. All sessions ended with compliments, a summary of the strengths noticed in that session, and a homework task. Later sessions involved exploring change the pupil had noticed from the previous session, considering instances of the preferred future and exceptions to the problem, scaling progress towards the preferred future, and ending the session (as in the first session).

The intervention took place in each participant's school and was conducted in a separate room from other pupils or adults. Each participant took part in four sessions of the intervention. One participant also received an additional fifth session of the intervention, as the practitioners were encouraged to judge if this would be beneficial for the pupil. Two sessions of the intervention were videoed per pupil. The average duration of a session was 20.24 min ($SD=9.15$).

The practitioners who delivered the intervention were members of school staff who were a family support worker, pastoral support coordinator, and two teaching assistants. None of the practitioners had previous experience in SFAs. From the start of the observations, the researcher emailed the practitioners weekly to check progress and provide encouragement. Supervision sessions were offered to all practitioners and taken up by the two practitioners working with participants 2 and 3, the other two practitioners chose not to receive supervision.

All practitioners delivering the intervention participated in a 1.5h training session delivered by the researcher, which was devised from research literature of SFBT. The training provided by the researcher provided an introduction to solution focused approaches and principles. The use of the manual for the intervention was described in terms of how it should be delivered: by listening to the pupil (Beyebach, 2014), building upon what the pupil says positively (Froerer & Jordan, 2013), and summarising, paraphrasing, and reflecting their words (Korman et al., 2013). The training included role-play activities, conducting observations and data collection, and practical issues such as delivering the intervention in a quiet room.

The study was approved by and conducted in compliance with the university research ethics committee.

Participants

Four members of school staff from four primary schools in England provided sessions of a solution focused intervention with one pupil each. Schools were invited to participate throughout the area by email. Informed consent was obtained from the participants and their parents/carers through a consent form. The final sample consisted of four pupils from four different schools aged 10 years old. The ethnicity of all participants was 'White British', three were male and one female.

Measures

Positive behaviour

Regular observations of one positive behaviour per participant were collected three times a week for 15 min. The behaviour was selected through discussion between the researcher and school staff for each pupil, which were

'verbal interaction with others' (participant 1), 'positive peer interactions' (participant 3), and 'on task behaviour' (participants 2 and 4). Momentary time sampling was used for the observations of participants 2, 3 and 4 and a frequency count was used for participant 1. The observers of behaviour were either conducted by the practitioners delivering the solution focused intervention or the school Special Educational Needs Coordinator. The inter-rater reliability of observations was assessed once for each pupil through a joint observation with a member of school staff and the researcher. This was acceptable for the momentary time sampling of participants 2, 3 and 4, which was between 0.74 and 1 as measured by Cohen's Kappa (Cohen, 1960). It was not possible to calculate the interrater reliability for participant 1.

Externalising behaviour

The Brief Problem Monitor (BPM, Achenbach et al., 2011) was collected as a pre and post measure to assess the participants' externalising behaviour as reported by parents (BPM-Parent), teachers (BPM-Teacher), and pupils (BPM-Youth). The three questionnaires have good reliability of the externalising subscale for BPM-Parent (Cronbach's $\alpha=0.88$), BPM-Teacher (Cronbach's $\alpha=0.88$) and BPM-Youth (Cronbach's $\alpha=0.75$). The criterion-related validity has been found to be a large effect size for BPM-Parent (Cohen's $f^2=0.45$), medium effect size for BPM-Teacher (Cohen's $f^2=0.23$), and a small effect size for BPM-Youth (Cohen's $f^2=0.14$; Achenbach et al., 2011).

Fidelity of the intervention

One videoed session was compared to the manual to determine a frequency count of the number of questions and the number of elements from the manual included in the session. This included a total of 36 questions and seven elements (problem free talk, exploring change, instances, exceptions, scaling preferred future, ending the session, and homework task). Session 2 or 3 of the intervention was used across participants.

Data analysis

To address Research Question 1, visual and statistical analysis was used on the multiple baseline data. Effect sizes were calculated for the data using the non-overlap methods of Tau-U (Parker et al., 2011) and improvement rate difference (IRD, Altman, 1999). For this study, Tau-U was computed using online software (Vannest et al., 2016). Tau-U scores are interpreted as weak ($\leq$ or equal to 65%), medium (66% to 92%), or large/strong (93% to 100%) effects (Parker & Vannest, 2009). Improvement Rate Difference measures are considered as small/questionable if under 50%, moderate if 50–70%, and large/very large if above 70%. The IRD has been validated through extensive use in medical research (Parker et al., 2009).

To answer Research Question 2, parent, teacher, and pupil rated scores on the externalising subscale of the BPM (Achenbach et al., 2011) were used. The Reliable Change Index (RCI, Jacobson & Truax, 1991) was calculated for the externalising behaviour scores for each participant. In this study, the RCI was calculated using an online calculator (Zahra, 2010). As RCI values can be interpreted as z-scores (Collie et al., 2003), the statistical significance was determined through an online calculator which calculated p -values from z-scores (Stangroom, 2018).

The fidelity of the intervention was calculated by the number of strategies used as a percentage of the number of strategies available (Borrelli et al., 2005). In previous research treatment fidelity has been categorised as 'high' if it reaches 80 to 100% adherence (Borrelli et al., 2005), 'moderate' at 51–79% (Toomey et al., 2017) and 'low' at 50% or less (Perepletchikova et al., 2007).

RESULTS

Positive behaviour

To address Research Question 1, the observations of each participant's positive behaviours at baseline and intervention phases were graphed (see Figure 1). Visual analysis was conducted, and analyses of Tau-U and IRD (see Table 1) were calculated to determine the effect size of the change in behaviour for each participant.

For all four participants, observations of their positive behaviours increased from baseline to intervention phases. A significant and large effect was found for participants 1 and 2, as shown by Tau-U (1) and IRD (100%).

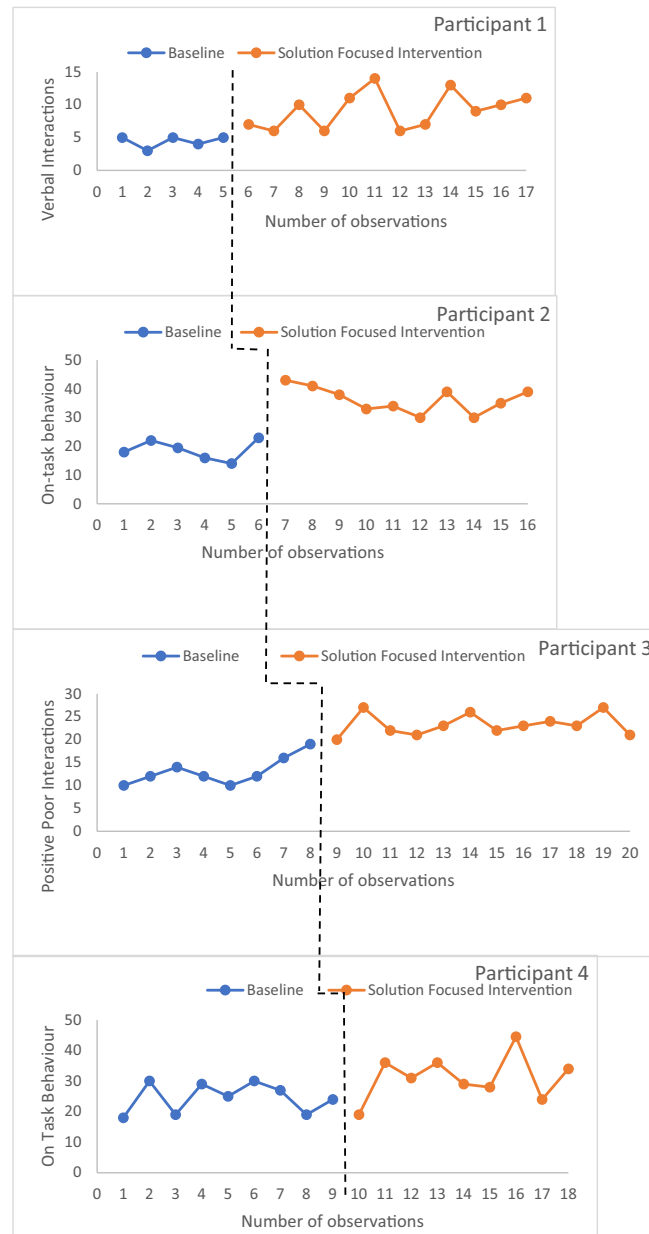


FIGURE 1 A representation of the multiple baseline design used to show the impact of the solution focused intervention on the positive behaviour of four participants.

TABLE 1 Summary of Tau-U and improvement rate difference effect sizes for the positive behaviours of participants.

Participants	Tau-U positive behaviour			90% CI	Descriptors	IRD	Descriptors
	Tau-U	z-score	p				
1	1	3.254	0.001	0.494, 1	Large	100%	Large/very large
2	1	3.162	0.002	0.480, 1	Large	100%	Large/very large
3	0.854	3.163	0.002	0.410, 1	Medium	100%	Large/very large
4	0.556	1.987	0.047	0.096, 1	Weak	44.44%	Small/questionable

For participant 3, a medium effect was found from Tau-U (0.85) and a large effect from IRD (100%). The effect for participant 4 was found to be weak when measured by Tau-U (0.56) and small/questionable in the measure of IRD (44.44%).

Externalising behaviour

To answer Research Question 2, pre and post measures of externalising behaviour on the BPM were analysed at an individual level using the RCI. The questionnaires were not available for participant 2 or for the parent ratings of participant 1. The RCI scores are found in Table 2. In order to calculate the RCI, the *SD* of the pre scores and Pearson's *r* from the BPM manual (Achenbach et al., 2011) were used for the parent (*SD*=6.36, *r*=0.83), teacher (*SD*=8.19, *r*=0.88), and pupil (*SD*=9, *r*=0.85) questionnaires.

Fidelity of the intervention

For each participant, the fidelity of the intervention was measured by calculating the percentage of questions and SFBT elements in the manual which were used in one videoed session of the solution-focused intervention (see Table 3). The fidelity to specific questions asked from the manual was found to be 'low' for all participants. Fidelity to the elements of the manual was 'moderate' for participants 1, 2 and 4 and 'high' for participant 3.

DISCUSSION

This research investigated the impact of a manualised solution focused intervention when delivered by school staff upon the positive and externalising behaviour of pupils. Consideration was also given to the ability of school staff practitioners to maintain fidelity to the intervention manual.

Visual analysis of the multiple baseline data, alongside Tau-U and IRD results, suggests an improvement in a positive behaviour for participants 1 ('interactions with others') and 2 ('on-task behaviour'), with significant and large effect sizes. The data for participant 3 displayed a medium effect when measured by Tau-U and a large effect when measured by IRD for the impact of the intervention upon positive interactions with peers. The results for participant 3 ('positive peer interactions') were affected by a positive trend in the baseline, which was corrected for with Tau-U. Three demonstrations of experimental effect were shown when the intervention was introduced for each of these individuals, as a change of level was demonstrated between the baseline and intervention phases. This indicates experimental control and suggests a functional relationship between the intervention and change in a positive behaviour of these participants (Horner et al., 2005). This provides tentative support for the effectiveness of the intervention.

For participant 4, a small/questionable and weak effect was demonstrated for the pupil's on-task behaviour, which was reflected in the high variability of the data across phases when analysed visually. There was a key difficulty in data collection for this pupil, as no data was available for the initial week in which the intervention began. A possible explanation for the lack of effect found is that the goal set in the first session of the intervention ('to improve my behaviour and attitudes') was not clearly defined (Rodríguez Morejón, 1994) or specifically related to the observed behaviour, and therefore the pupil may not have been aware of, or trying to change their on-task behaviour. However,

TABLE 2 The RCI values and statistical significance for externalising behaviour as rated by parent, teacher and pupil.

Participant	Parent	<i>p</i>	Teacher	<i>p</i>	Pupil	<i>p</i>
1	n/a	n/a	-0.50	0.617	0.00	>0.999
3	-3.24	0.001	-1.00	0.317	-1.83	0.067
4	1.08	0.280	-2.74	0.006	0.81	0.418

TABLE 3 The questions and elements of the solution focused intervention manual used by each practitioner.

	Practitioner			
	1	2	3	4
Total questions asked (out of 36)	15	17	14	11
% adherence of total questions asked	41.66	47.22	38.89	30.56
Total elements included (out of 7)	5	5	6	4
% adherence of total elements included	71.43	71.43	85.71	57.14

the teacher rated measure of externalising behaviour significantly reduced for this pupil, which would suggest this pupil was working towards his goal of improving his behaviour generally in the classroom rather than to improve the observed 'on-task' behaviour.

The measure of externalising behaviour also significantly reduced for the parent rating for participant 3. However, this impact was not seen across respondents and therefore across contexts for any one participant. A small number of eight questionnaires were available for analysis due to missing data, which limits the impact of the results found.

This research also aimed to explore if non-specialist school staff practitioners could maintain fidelity to an intervention manual. The manual was presented as a guide from which the practitioners should use the most appropriate questions for the pupil's responses, the practitioners were not expected to use all of the questions from the manual, so as to be relevant to a range of pupil responses. Therefore, it is more important to note that all of the practitioners used questions from the manual with appropriate wording (between 10 and 17), rather than judging the fidelity to the manual solely on the number of questions they used. For the current research, the average adherence would be 71.43% ($SD=11.66$) to the elements and 39.58% ($SD=8.60$) to the questions of the manual. Perhaps a better measure of fidelity would be the number of elements included in the session, which ranged from 'moderate' fidelity for pupils 1, 2 and 4 to 'high' fidelity for pupil 3. These ratings are in line with previous research (in the area of health behaviour), which has found a limited number of studies that reach a 'high' treatment fidelity (15.5%) and an average score of 55% adherence across 342 studies (Borrelli et al., 2005). Thus, non-specialist school-staff practitioners were able to apply elements from the manual appropriately and ask some of the questions which would be expected in a typical solution focused conversation.

There is debate within the research literature around the manualisation of therapy to support the mental health of children and young people. There are examples of therapeutic programmes which have been designed for delivery by non-specialist practitioners, such as brief behavioural activation, which is highly structured with the use of a manual, session checklist and supervision (Pass et al., 2018). Manualisation has also been regarded as a form of standardisation of interventions such as CBT (Hassiotis et al., 2013). However, there is concern around the appropriateness of a manual acting as a replacement for the clinical expertise and flexibility required by a therapist (Cook et al., 2017). Experienced practitioners of similar interventions have been found more likely to draw on their previous experience than to comprehensively deliver all aspects of a protocol (Toomey et al., 2017).

Solution focused therapists would not typically work in a 'pre-determined direction' (Berg & Dolan, 2001) as presented by this solution focused intervention. Therefore, a key challenge arose for the practitioners from the balance they were required to maintain between following the prescriptive model of the manual and responding flexibly to the pupil, for example, by allowing the pupil to lead the sessions, which is considered an important aspect of SFBT (Beyebach, 2014). Ideally, a balance between fidelity and adaptation has been found to maximise an intervention's effectiveness, as this can allow for a feasible and individualised intervention (Castro et al., 2004; Toomey et al., 2017). It has been argued that non-specialist practitioners can be supported to deliver approaches sensitively and flexibly through discussing adaptations to a manual through supervision (Pass et al., 2018). The research aimed to mitigate for this by providing opportunities for discussion, role-play, and problem solving with the practitioners within training and supervision.

LIMITATIONS AND FUTURE RESEARCH

The study used a quasi-experimental AB design and therefore did not replicate the baseline or intervention phases (Shadish et al., 2002). Ideally, a follow-up second baseline phase would also have been measured as was the researcher's intention; however, this became unfeasible due to the timing of the intervention within the school term. Randomisation was incorporated by using a randomised phase start point design, which increases the scientific credibility of the design (Kratzschwill & Levin, 2010). However, it should be noted that while school A was randomly assigned to a condition of nine baseline data points, they collected five baseline data points due to timing constraints.

The usability of the manual is likely to have impacted the fidelity to the intervention. The researcher aimed for the manual to be accessible, by highlighting questions within boxes and by providing a quick reference list of questions. However, as the practitioners had limited time to read the manual, and included a wide range of questions, this presented a risk to fidelity. The fidelity to the manual is also likely to have been impacted by the length of the training provided (1.5h), which limited opportunities for practitioners to practice the elements and questions of the manual within this. Furthermore, some practitioners asked questions that were not in the manual or did not follow the principles of solution focused conversations. For future use of the intervention, longer training sessions with additional time to practice the elements, a more condensed and visual manual, and opportunities to

review videoed sessions with practitioners (Franklin et al., 2008) are likely to support the effective delivery of the intervention.

It is important to consider that just 15% of the effectiveness of any therapeutic intervention is determined by the intervention itself, with 40% related to client factors, 30% to the therapeutic relationship, and 15% to placebo effects (Lambert, 1992). It has not been possible to identify such contributing factors to the effectiveness of the SFA employed in this research. Nonetheless, the adoption of a robust approach to measuring the fidelity to the intervention has allowed the researcher to explore the content of interactions and therefore to examine the process of change within the intervention.

CONCLUSION AND IMPLICATIONS FOR PRACTICE

This research contributes to the future practice of non-specialist school staff delivery of an SFA. The findings suggest that, with training and the manual of determined procedures and techniques, the practitioners delivered the intervention to demonstrate an effect for a positive behaviour of three of four participants, although there was limited support for a measure of externalising behaviour. The manualised intervention supported the practitioners to hold a solution focused conversation with a pupil with some fidelity to the manual, which varied across practitioners.

This research also contributes to the methodological literature through the approach used to analyse fidelity. By comparing the elements and questions from the manual with those used in a videoed session, the researcher was able to explore the quality of the interactions between practitioner and pupil to determine which aspects of a typical solution focused conversation were used and how often. Were this approach to be used for future research of the same intervention, it could be extended to assess how an effective solution focused conversation is delivered, for example, to measure the number of times a practitioner summarises or paraphrases what the pupil says and builds upon this positively (Froerer & Jordan, 2013; Korman et al., 2013). Furthermore, such a method could be adapted to assess the fidelity of other interventions to a manual.

This research has highlighted that further guidance would be beneficial for future practitioners around the delivery of the intervention. Where SFA interventions are being delivered by non-specialist staff in the future, robust training programmes are recommended with more opportunities to consider, how practitioners should respond to unexpected, limited, or irrelevant responses to the manualised questions. Next steps in research on SFA interventions will need to include group-based randomised experimental research to explore its generalisability for use with a wider range of pupils, for example with those who are older, from more diverse backgrounds and socioeconomic statuses.

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CONFLICT OF INTEREST STATEMENT

The author declares no conflict of interest.

DATA AVAILABILITY STATEMENT

Research data are not shared.

ETHICS STATEMENT

The study was approved by and conducted in compliance with the university research ethics committee.

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